



Forest Health Protection

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Special Project Report

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To: District Ranger, Feather River Ranger District, Plumas National Forest

Subject: Bucks Fire – Survivability of Fire-Injured Trees (NE-SPR-07-05)

Thank you for allowing Forest Health Protection (FHP) to implement and monitor fire-injured trees in the 1999 Bucks Fire. We have now completed the monitoring of 251 trees, which were included as part of our larger FHP data set for fire-injured California conifers. With this data set we have since developed and published probability of mortality models which will be incorporated into the First Order Fire Effects Model (FOFEM), Forest Vegetation Simulator-Fire and Fuels Extension (FVS-FFE) and BehavePlus and are the bases for the FHP fire salvage marking guidelines currently being utilized by three National Forests in Region 5.

The General Technical Report can be found online at:

http://www.fs.fed.us/psw/publications/documents/psw_gtr203/psw_gtr203_019hood.pdf

The latest version of the salvage marking guidelines is available from FHP upon request.

One other item of interest on the Bucks Fire is the number of white fir and red fir that are still green despite suffering extensive cambial injury during the fire. Many of these green crowned trees have developed extensive stem decay and some have failed. Based on observations from 2006 there are many residual trees with these characteristics that have the potential to fail in the next few years. Please refer to the following web address for more information regarding these potentially hazardous trees.

http://www.fs.fed.us/r5/spf/publications/Hazard_Tree_Alert.pdf

FHP plans to continue monitoring these green hazard trees for failure and to also monitor snag longevity for study trees that have died over the past six years. Snags will be painted with double orange bands and a large number at breast height. Please continue to protect these trees and to call FHP if they need to be removed for any reason.

We greatly appreciated the cooperation of District personnel in setting up and completing the study. Enclosed please find a summary of data collected from 2001 to 2006 and a map of tree locations. Please contact me if you have any questions.

/s/ Danny Cluck

Danny Cluck
NESA Entomologist

Data Summary for the 1999 Bucks Fire

Table 1. Total number of trees and mortality by year.

Species	# of trees evaluated in 2001 (all live)	2002 Mortality	2003 Mortality	2004 Mortality	2005 Mortality	2006 Mortality	Total Mortality
Red fir	112	6	10	9	0	3	28
White fir	124	7	2	2	1	5	17
Sugar pine	15	2	1	1	1	0	5
TOTAL	251	15	13	12	2	8	50

Table 2. Number of trees and % survival by percent remaining live crown.

Live Crown (%)	# of red fir	% survival	# of white fir	% survival	# of sugar pine	% survival
1-20%	5	60%	3	67%	0	N/A
21-34%	14	50%	29	72%	0	N/A
35-49%	29	69%	30	83%	0	N/A
50-69%	35	80%	28	93%	5	60%
>=70%	29	90%	34	97%	10	70%

Table 3. Number of trees and % survival by cambium kill rating.

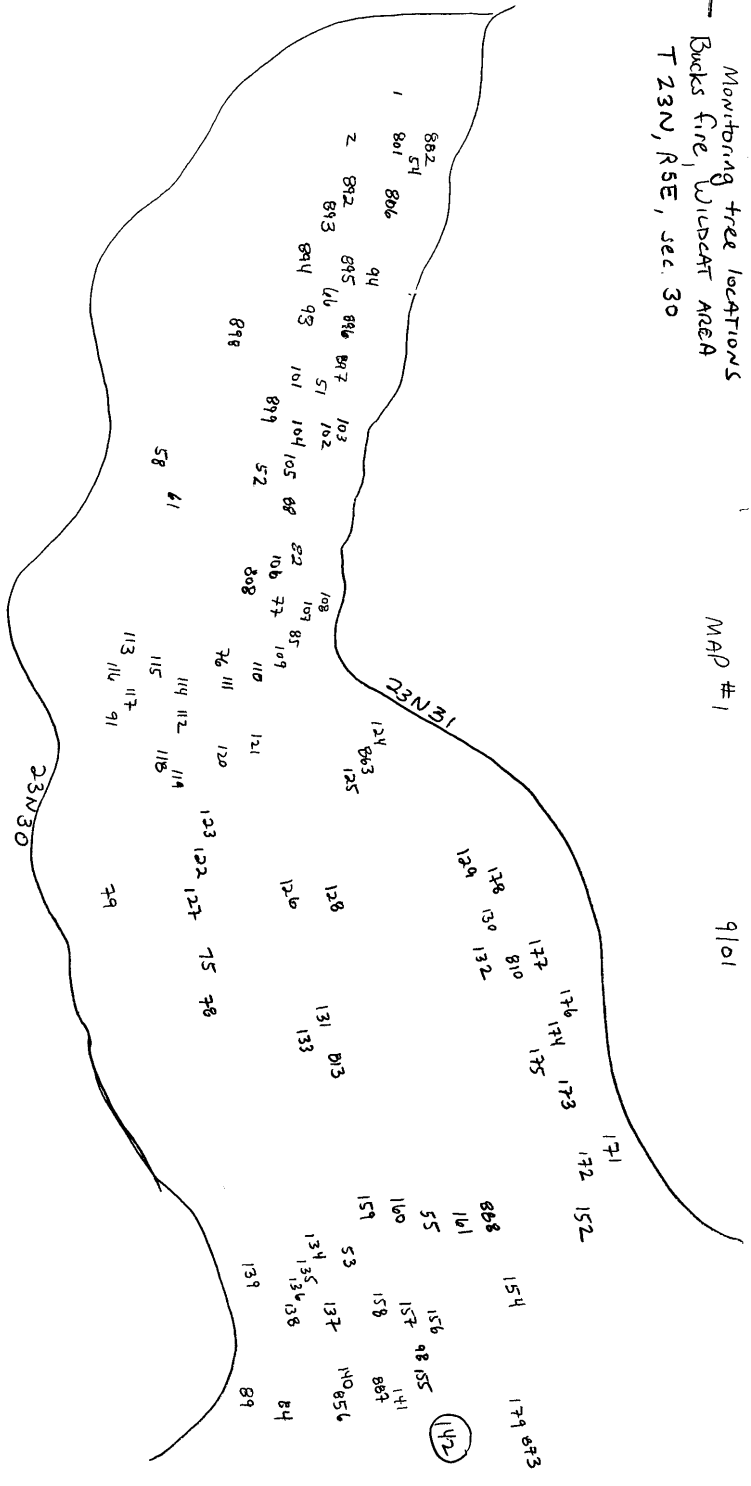
Cambium Kill Rating	# of red fir	% survival	# of white fir	% survival	# of sugar pine	% survival
0	40	90%	48	92%	4	100%
1	48	67%	34	88%	3	67%
2	16	75%	24	88%	5	60%
3	7	57%	10	70%	2	0%
4	1	0%	8	63%	1	100%

- Rating of 0-4 is based on a cambium sample taken in each of four equally spaced directions near ground level. A rating of 0 is equal to no fire damage for any sample and 4 is equal to dead cambium at each sample location.

Table 4. Number of trees and % survival by diameter breast height.

DBH (inches)	# of red fir	% survival	# of white fir	% survival	# of sugar pine	% survival
5-20	96	73%	101	83%	10	70%
20+	16	88%	23	100%	5	60%

Please note correction to legal description: **Correct description is T23N, R6E, Sec. 30.**



MAP #2

9/01

